CHAPTER 5
LIFE OF INSECTS

Lau Wei Hong

Crystals of Salt
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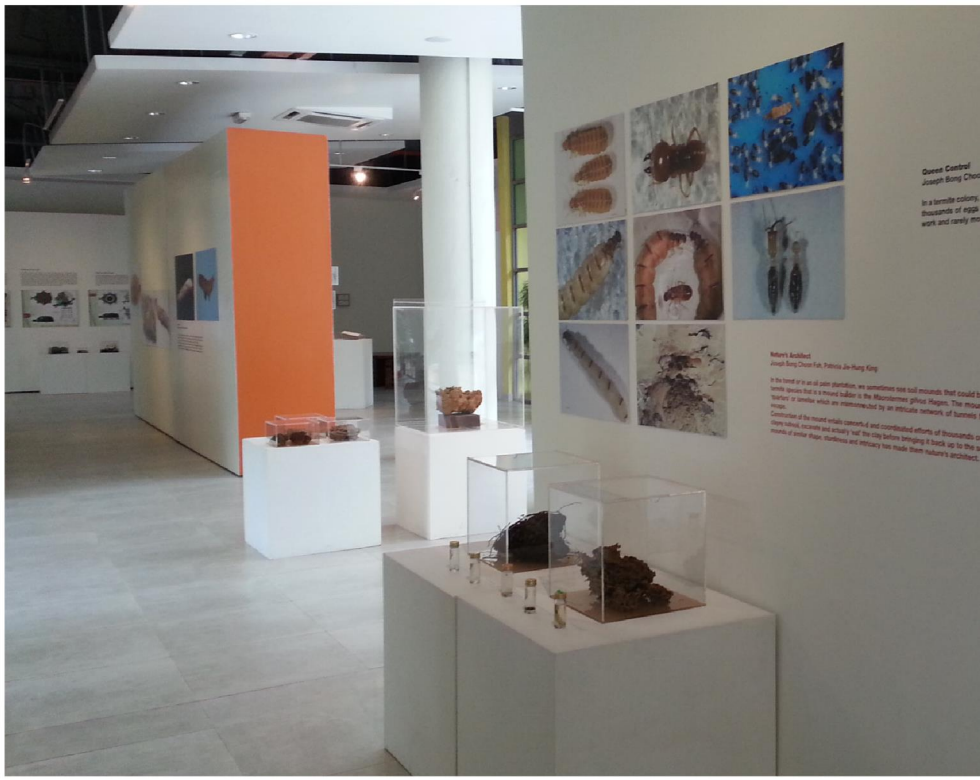
Nature's Architect
Joseph Bong Choon Fah, Patricia Jie-Hung King

True Transformer
Nur Azura Adam, Rita Muhamad Awang, Syari Jamian

Queen Control
Joseph Bong Choon Fah, Patricia Jie-Hung King

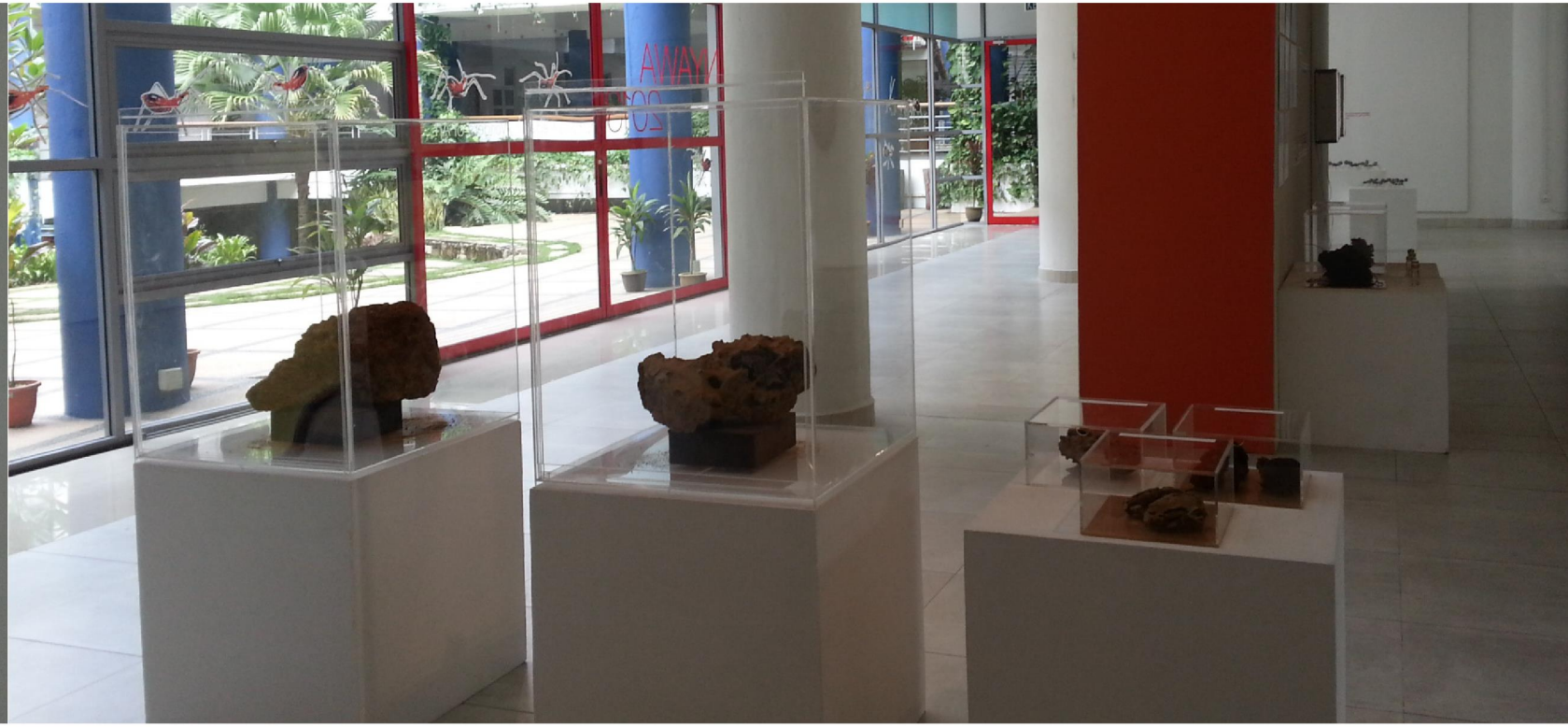


r Feh. Patricia J.H. King

the queen termite is the central figure which performs the vital task of procreation by laying per day to give rise to the enormous number of termites within the colony. She does not ves, but grows to very large size in the queen's chamber.

e up to 1 meter tall. These are termite mounds. The common nd is actually a sort of 'house' that contains numerous living or instant and efficient communication and accessibility, or

worker termites which tunnel deep into the soil to reach the rface. This natural instinct that enables the termites to build



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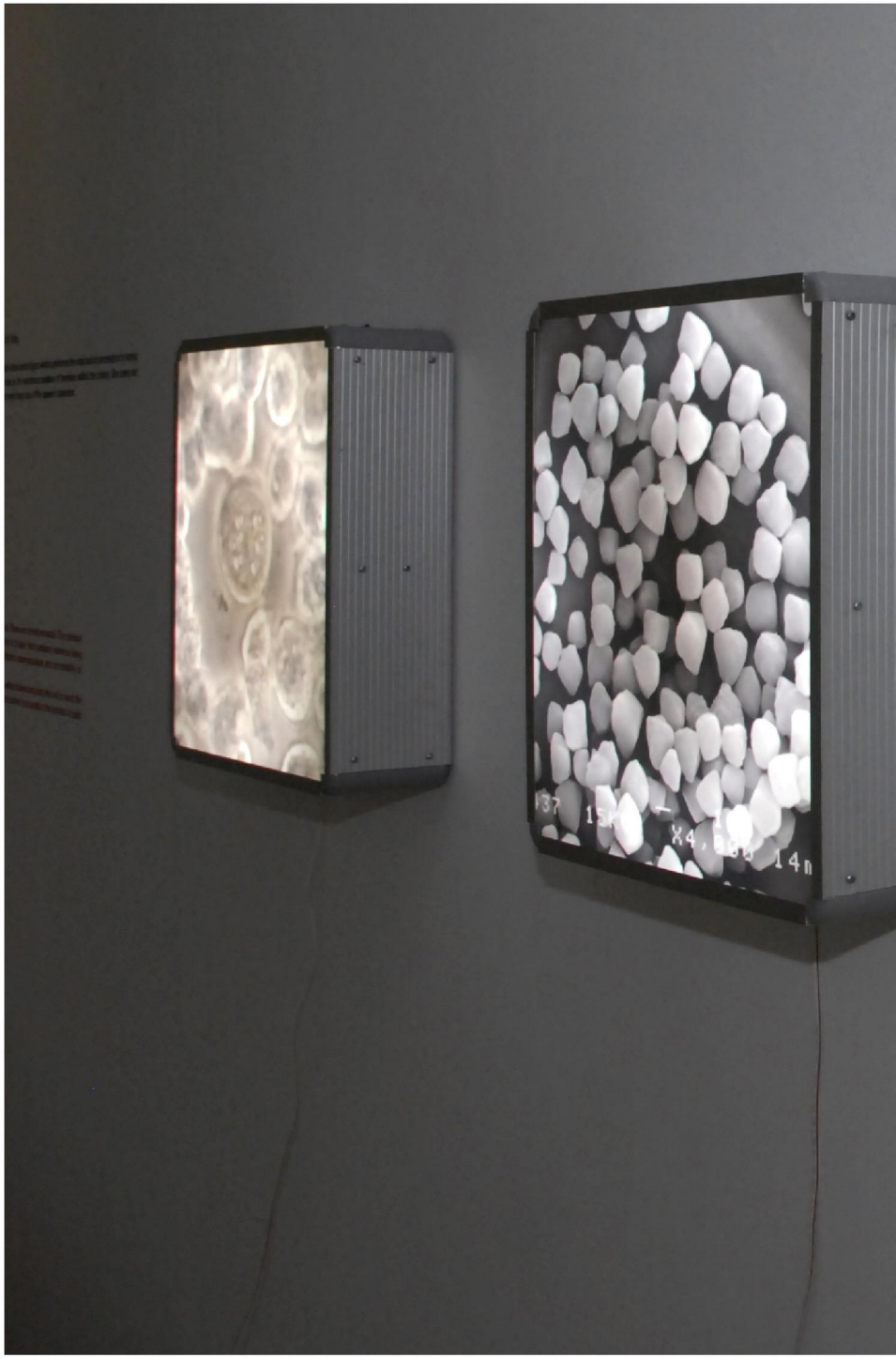

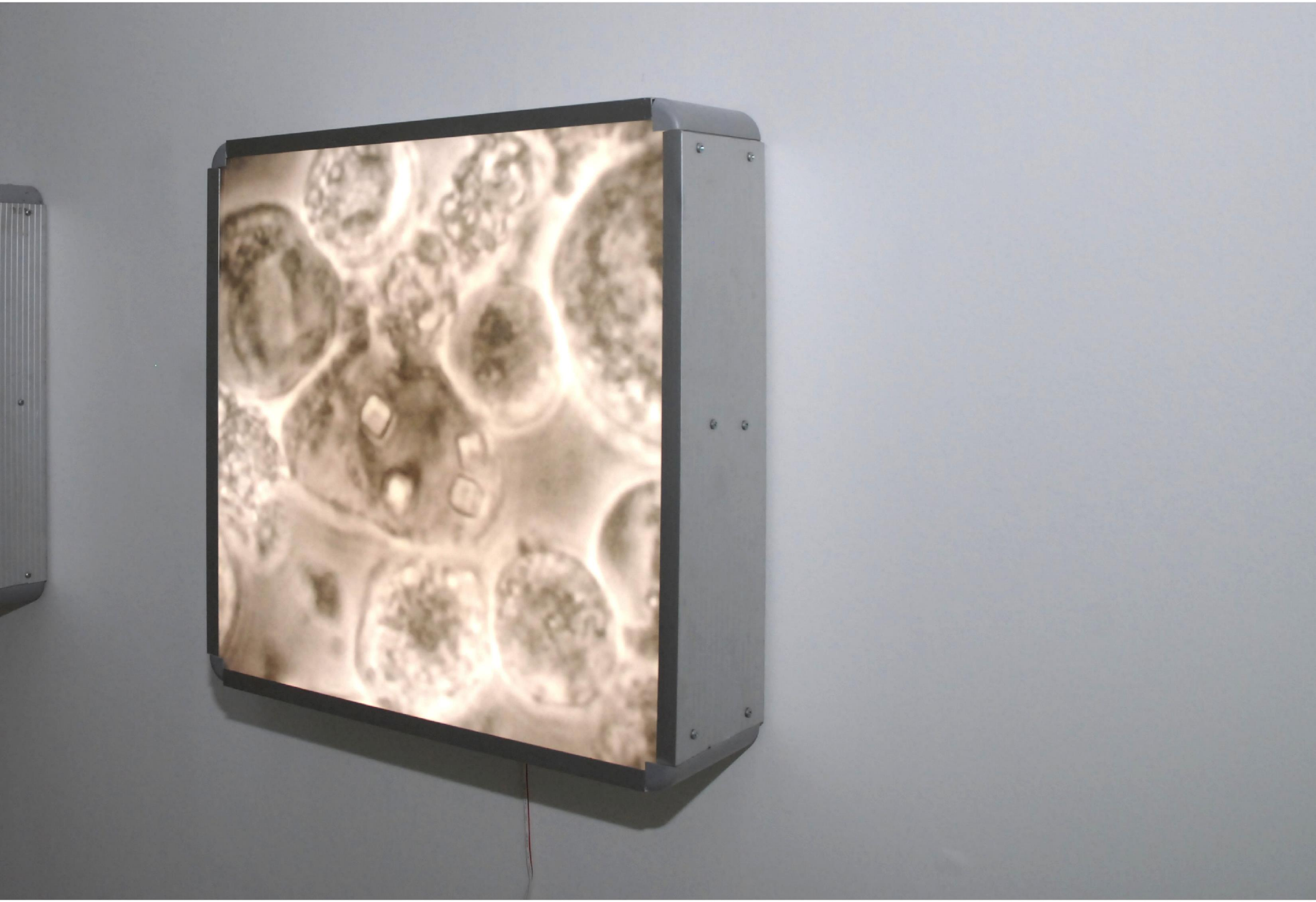

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Life Of Insects

Lau Wei Hong

Insects have a simple life, and their main purpose in life is to reproduce. Unlike humans, they do not grow gradually. Insects undergo a series of transformations from egg, immature, pupae to adult. This process is called metamorphosis. Insects with complete metamorphosis will undergo all the four stages while insects with incomplete metamorphosis do not undergo the pupae stage. Insects like armyworms, butterflies, bees, beetles and flies undergo complete metamorphosis whereas termites, true bugs, dragonflies, cicadas and cockroaches do not.

Egg is the beginning of an insect's life. It carries genetic information that is inherited from generation to generation. At this stage, the rest of its life to this world has been programmed, with respective ability and skill to survive. The immature insects, normally referred as larva or nymph, come to this world once the egg hatch. Their ability to eat is coded in their genetic make-up and they immediately begin to eat once they hatch from their eggs. All of them are incredible eating machine at this stage. The immature insects may become a pest or friend to humans depending on the food they eat and the microbes they transmit. They undergo a unique growing process at this stage of the insect life where they will shed their skins a couple of times in order to become bigger in size. For those undergoing complete metamorphosis, significant amount of food energy were collected and stored in order to transform into pupae, whereas the ones that do not, will keep growing into adults. The pupae look lifeless, but inside a very astonishing transformation process, namely pupation, takes place gradually. The body parts of an immature insect dissolve and new features grow in their place, including a totally different head, body, three pairs of legs, and two pairs of wings. A fully-formed adult finally will then emerge.

There are good and bad insects in gardens, plantations, orchards and farms. The good ones like bees will help in pollinating crops and producing honey, or they predate on other insect pests for survival. The dragonflies, for example, feed on aquatic insects and their eggs. They hover like helicopters over rivers and ponds, and become important predators that feed on mosquitoes, flies, ants, bees and wasps. The harmful insects always cause direct injuries to humans and their belongings. Examples like armyworms, cockroaches and termites have chewing mouthpart which causes noticeable holes in leaves, fabrics and wood. Armyworms are leaf

feeders and can skeletonize the entire crops overnight while cockroaches are one of the common household insect pests that feed on what is available to them. Termites feed on cellulose in various forms and can destroy our home from the inside out. Some insects do not bite but they suck. For example, the cicadas suck plant sap while the true bugs feed on mammal blood. Some natural enemies such as predators and beneficial pathogens are available in the surrounding to keep the pest levels below the economic loss threshold.

Most insects have a solitary life. Solitary insects like armyworms, cockroaches, true bugs, cicadas and dragonflies live and hunt by themselves. Whereas social insects like ants, termites and bees live in complex societies. As genetically determined, some insects of the same species have a different physical appearance with a very different role to play in the insect society. A termite colony, for example, consists of four castes: a queen, a king, workers and soldiers. The king and queen are responsible for producing offspring but the queen termite rules the colony. The soldiers guard the colony against its enemies while the workers are responsible for food hunting for the colony.

Whether it is a good or a bad insect, as to any life form, the life of an insect will eventually end. Immature and adult insects have many natural enemies and are preyed on by predators such as birds, spiders, lizards and beetles or parasites such as wasps and flies that lay eggs inside their body. Those that survive from the predation may also be attacked by diseases. The causal agent may be a virus, fungus or bacterium. The “Crystals of Salt” article reveals a local naturally occurring virus that infects armyworm. This silent pathogen takes control of the host insect and produces more of its progeny for the next victim. It helps us by killing more insect pests in the gardens, plantations, orchards and farms.

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